

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-24. (Canceled).

25. (Previously Presented) A semiconductor layer arrangement, comprising:

a substrate;

a layer being arranged on the substrate, the layer including a first subregion and a second subregion arranged proximate to the first subregion, the first subregion being a decomposable and photopatternable material and the second subregion having a structure of non-decomposable material;

an electrically conductive passivation layer substantially covering an upper surface of the structure of non-decomposable material; and

a covering layer positioned on the layer including the first subregion and second subregion, the covering layer substantially covering an upper surface of the electrically conductive passivation layer;

wherein the decomposable and photopatternable material is diffusible through the covering layer while the first subregion being mechanically closed off with respect to the outside world.

26. (Previously Presented) The semiconductor layer arrangement according to Claim 25, further comprising an intermediate layer between the substrate and the layer of decomposable material and the useful structure.

27. (Previously Presented) The semiconductor layer arrangement according to claim 26, wherein the covering layer and the intermediate layer comprises dielectric material.

28. (Previously Presented) The semiconductor layer arrangement according to claim 26, wherein the covering layer and the intermediate layer comprises any one of silicon oxide, silicon nitride, SiLK, porous SiLK, oxazole, porous oxazole, Black Diamond, Coral,

Nanoglass, JSR LKD, polybenzoxazole, polybenzimidazole, polyimide, polyquinoline, polyquinoxaline, polyarylene, and polyarylene ether, and combinations thereof.

29. (Canceled).

30. (Canceled).

31. (Previously Presented) The semiconductor layer arrangement of Claim 25, wherein the structure of non-decomposable material is an electrically conductive material.

32. (Previously Presented) The semiconductor layer arrangement as claimed in Claim 31, wherein the structure of non-decomposable material comprises any one of silver, a silver alloy, tungsten, tungsten silicide, aluminum, an aluminum alloy, copper; and copper alloy.

33. (Canceled).

34. (Previously Presented) The semiconductor layer arrangement of Claim 25, wherein the structure of non-decomposable material is a dielectric material.

35. (Previously Presented) The semiconductor layer arrangement of Claim 34, wherein the structure of non-decomposable material comprises any one of silicon dioxide, silicon nitride, ceramic material, and combinations thereof.

36. (Previously Presented) The semiconductor layer arrangement of Claim 25, wherein the decomposable material is thermally decomposable.

37. (Previously Presented) The semiconductor layer arrangement of Claim 36, wherein the decomposable material comprises any one of polyester, polyether, polyethylene glycol, polypropylene glycol, polyethylene oxide, polypropylene oxide, polyacrylate, polymethacrylate, polyacetal, polyketal, polycarbonate, polyurethane, polyether ketone, cycloaliphatic polymer, polynorbornene, aliphatic polyamide, Novolak, polyvinylphenol,

an epoxy compound, copolymer of these compounds, terpolymer and combinations thereof.

38. (Canceled).

39. (Previously Presented) The semiconductor layer arrangement of Claim 25, wherein at least one support structure is formed in the layer arranged between the substrate and the covering layer.

40. (Previously Presented) The semiconductor layer arrangement of Claim 25, comprising a protective structure running along a lateral boundary of the substrate.

41. (Previously Presented) The semiconductor layer arrangement of Claim 25, comprising a passivation layer at least partially surrounding the structure.

42. (Previously Presented) A process for forming a layer arrangement, comprising:
 forming a layer on a substrate, the layer including a first subregion and a second subregion arranged proximate to the first subregion, the first subregion having a material which is both decomposable and photopatternable and the second subregion having a structure of a non-decomposable material;
 forming an electrically conductive passivation layer substantially covering an upper surface of the structure; and
 forming a covering layer on the layer including the first subregion and second subregion, the covering layer substantially covering an upper surface of the electrically conductive passivation layer;
 wherein the material which is both decomposable and photopatternable is removable from the layer arrangement by diffusing through the covering layer while the first subregion is mechanically closed off to all area outside the layer arrangement.

43. (Previously Presented) The process of Claim 42, further comprising causing the decomposable material to be removed from the layer arrangement.

44. (Previously Presented) The process of Claim 43, where the decomposable material is caused to be removed from the layer arrangement by thermal decomposition.

45. (Previously Presented) The process of Claim 42, wherein the structure is formed from copper and is at least partially sheathed by a passivation layer being formed from any one of cobalt-tungsten-phosphorus, cobalt-tungsten-boron, cobalt-phosphorus or ruthenium and combinations thereof by means of an electroless deposition process.

46. (Previously Presented) The process of Claim 42, wherein the structure is formed from copper and is at least partially sheathed by a passivation layer being formed from any one of tantalum, tantalum nitride, titanium nitride, tungsten, tungsten nitride or tungsten carbide and combinations thereof by means of a chemical vapour deposition process.

47. (Previously Presented) The process of Claim 42, wherein forming a layer on the substrate further comprises:

depositing and patterning the decomposable material on the substrate; depositing the material of the structure on the substrate; and

planarizing the surface of the deposited decomposable material and material of the structure.

48. (Previously Presented) The process of Claim 42, wherein forming the layer on the substrate further comprises:

depositing and patterning material of the structure on the substrate;

depositing the decomposable material on the substrate; and

planarizing the surface of the deposited decomposable material and material of the structure.

49. (Previously Presented) The process of Claim 42, further comprising forming at least one additional layer stack on the covering layer, the additional layer stack having an additional covering layer on an additional layer comprising decomposable material and a useful structure.

50. (Previously Presented) The process of Claim 49, wherein structures that are separated by a covering layer are coupled by at least one contact hole being introduced into the covering layer and being filled with electrically conductive material.

51. (Currently Amended) A semiconductor layer arrangement, comprising:

a substrate;

a layer being arranged on the substrate, the layer including a first subregion and a second subregion arranged proximate to the first subregion, the first subregion being a decomposable and photopatternable material and the second subregion having a structure of non-decomposable material;

an electrically conductive passivation layer substantially covering an upper surface of the structure of non-decomposable material;

a covering layer positioned on the layer including the first subregion and second subregion, the covering layer substantially covering an upper surface of the electrically conductive passivation layer;

wherein the decomposable and photopatternable material is diffusible through the covering layer while the first subregion being mechanically closed off with respect to the outside world; and

wherein at least one support structure is formed in the layer arranged between the substrate and the covering layer.